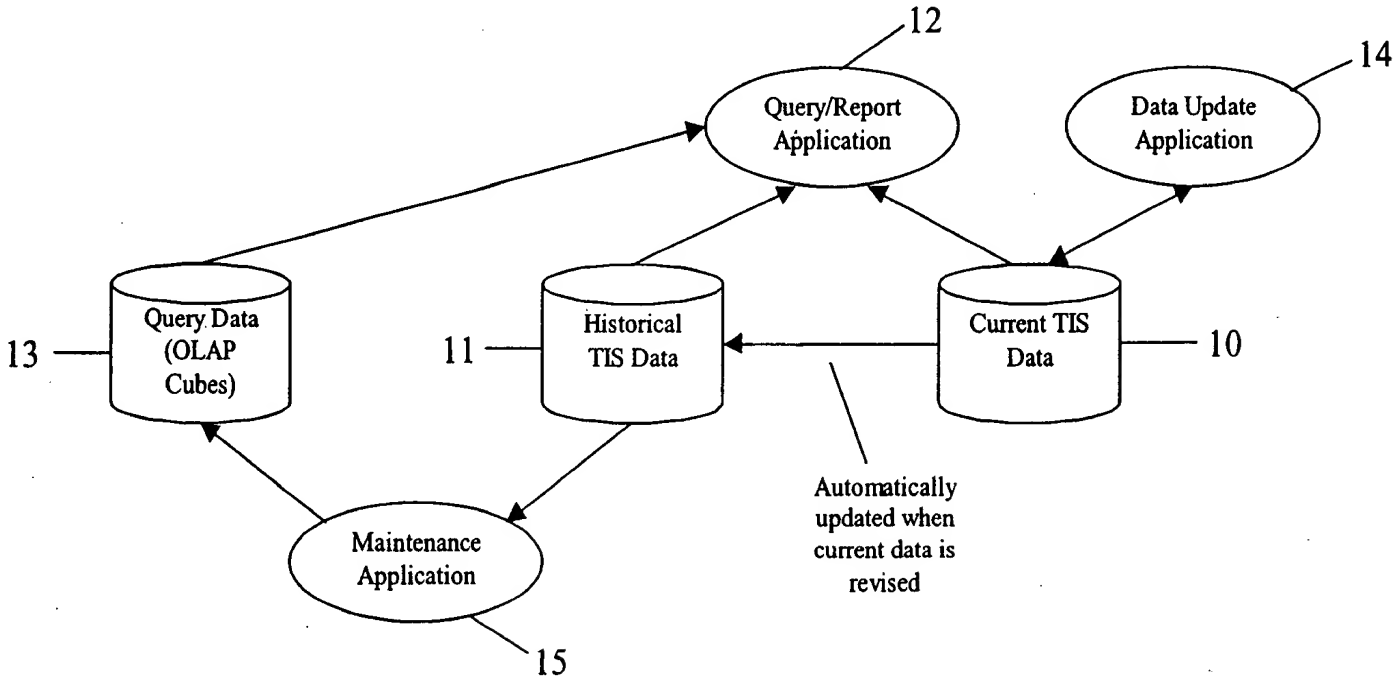
12
Query/Report Application
14
Data Update Application
13
Query Data (OLAP Cubes)
11
Historical TIS Data
Current TIS Data
10
Automatically updated when current data is revised
Maintenance Application
15

FIG. 1

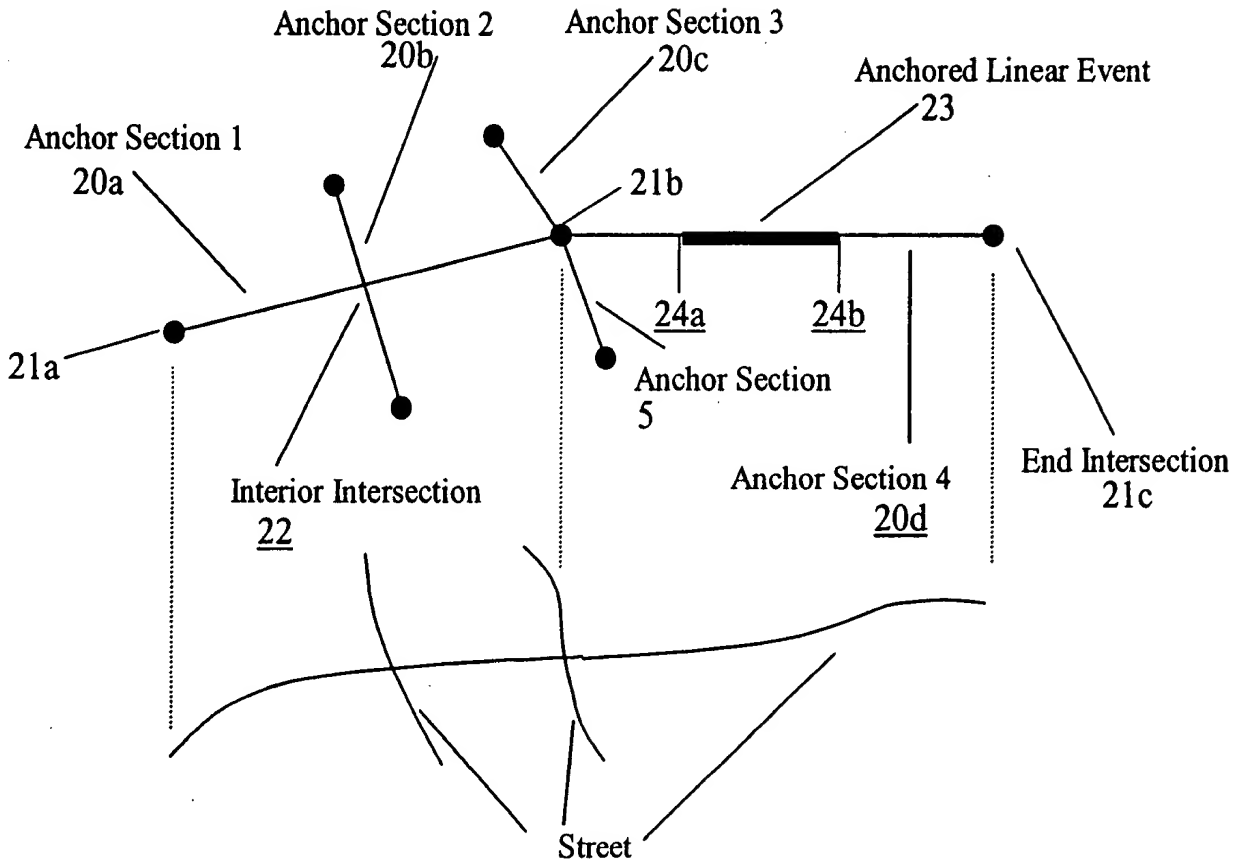
Anchor Section 2
20b
Anchor Section 3
20c
Anchored Linear Event
23
Anchor Section 1
20a
21b
24a
24b
21a
Anchor Section
5
Interior Intersection
22
Anchor Section 4
20d
End Intersection
21c
Street

FIG. 2

PATENT APPLICATION

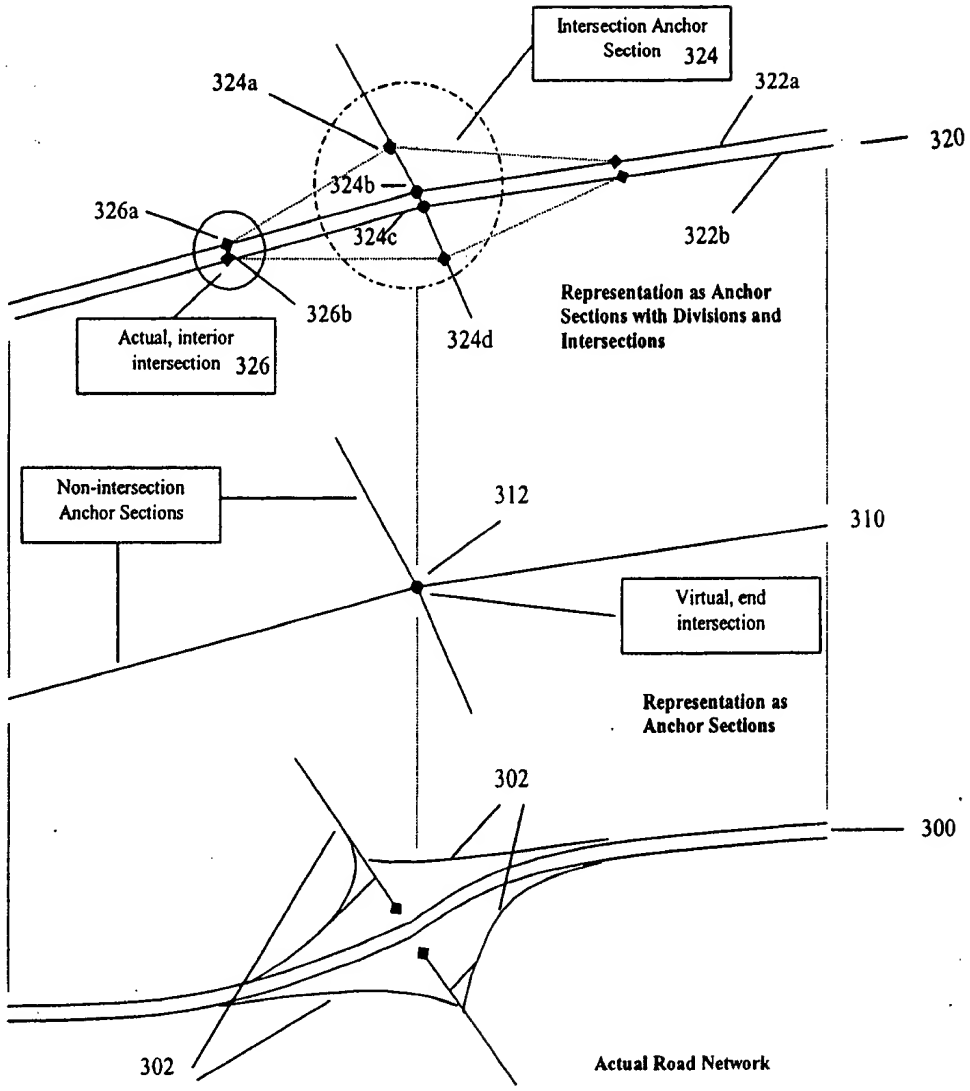

FIG. 3

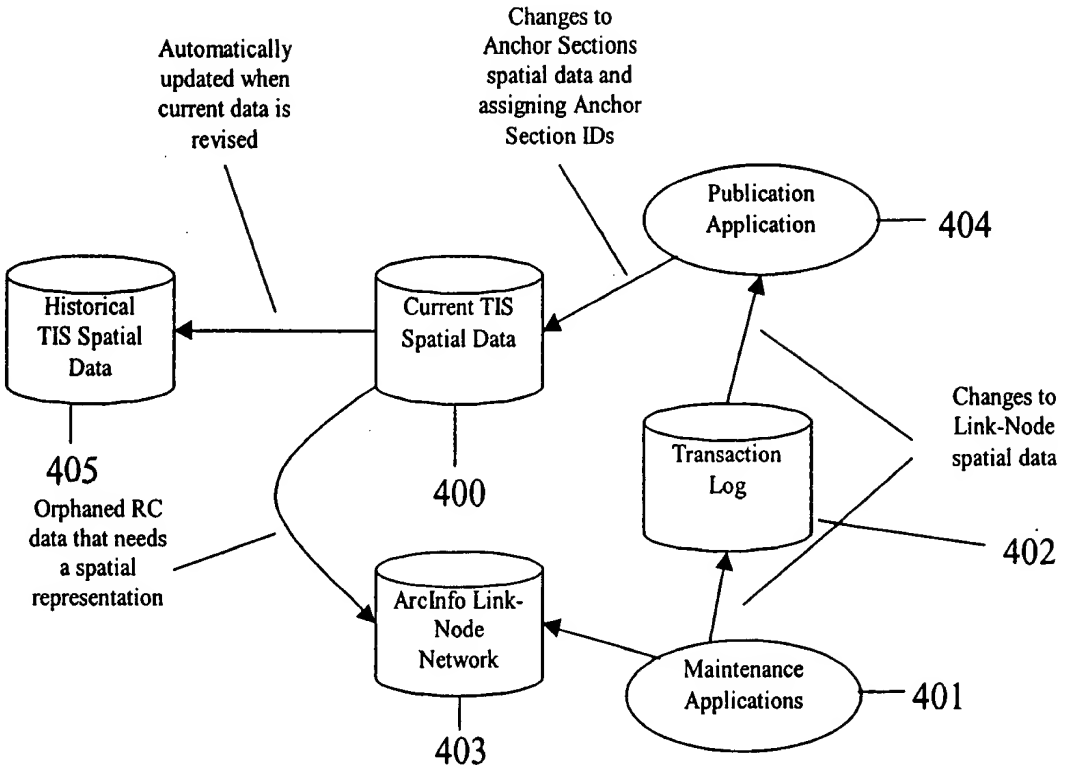
Automatically updated when current data is revised
Changes to Anchor Sections spatial data and assigning Anchor Section IDs
Publication Application
404
Historical TIS Spatial Data
Current TIS Spatial Data
Changes to Link-Node spatial data
Transaction Log
405
Orphaned RC data that needs a spatial representation
400
402
ArcInfo Link-Node Network
Maintenance Applications
401
403

FIG. 4

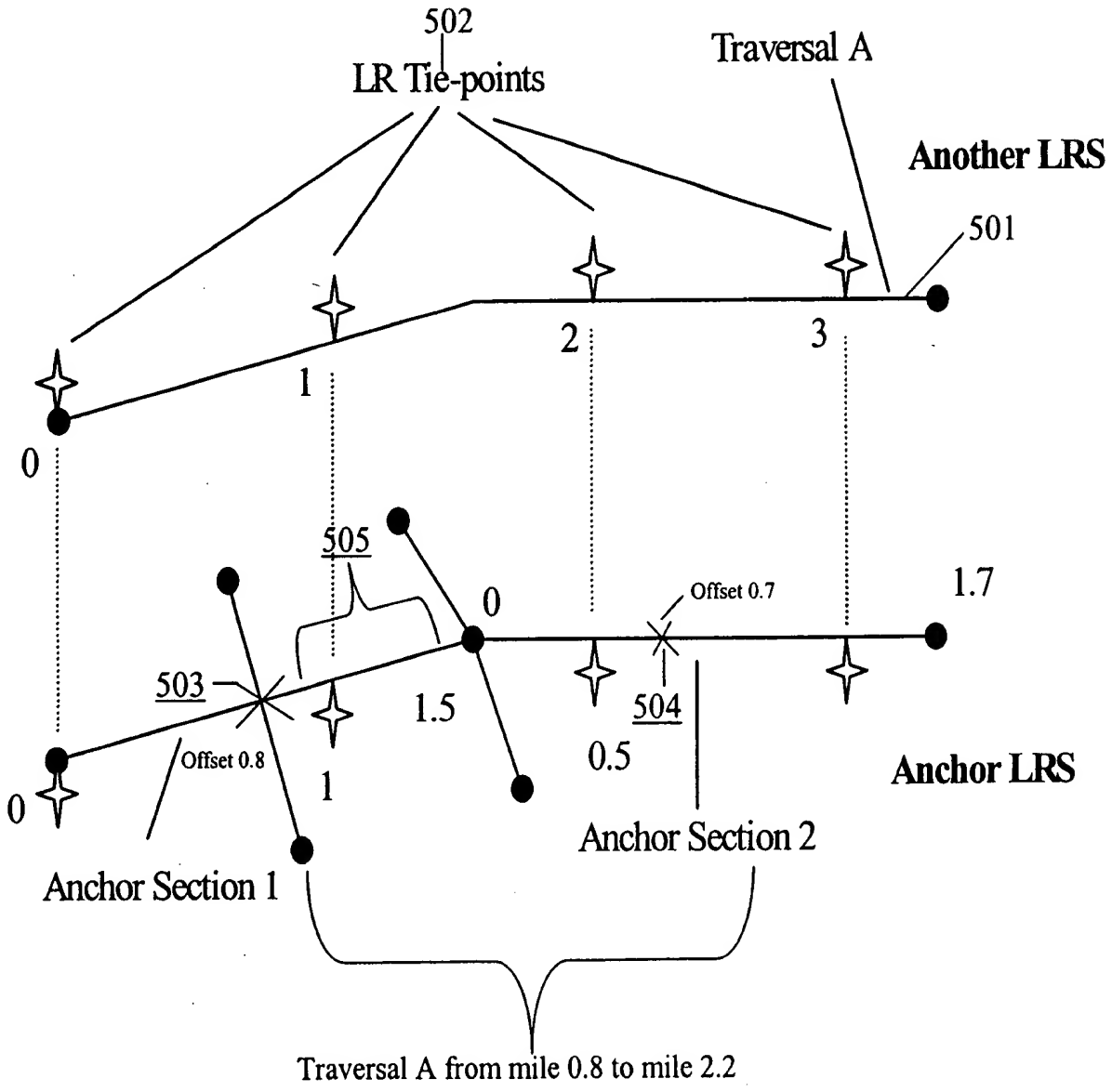
502
LR Tie-points
Traversal A
Another LRS
501
0
1
2
3
505
0
Offset 0.7
1.7
503
1.5
504
0.5
Offset 0.8
1
0
Anchor LRS
Anchor Section 1
Anchor Section 2
Traversal A from mile 0.8 to mile 2.2

FIG. 5

TOSTHO" 2ESH2860

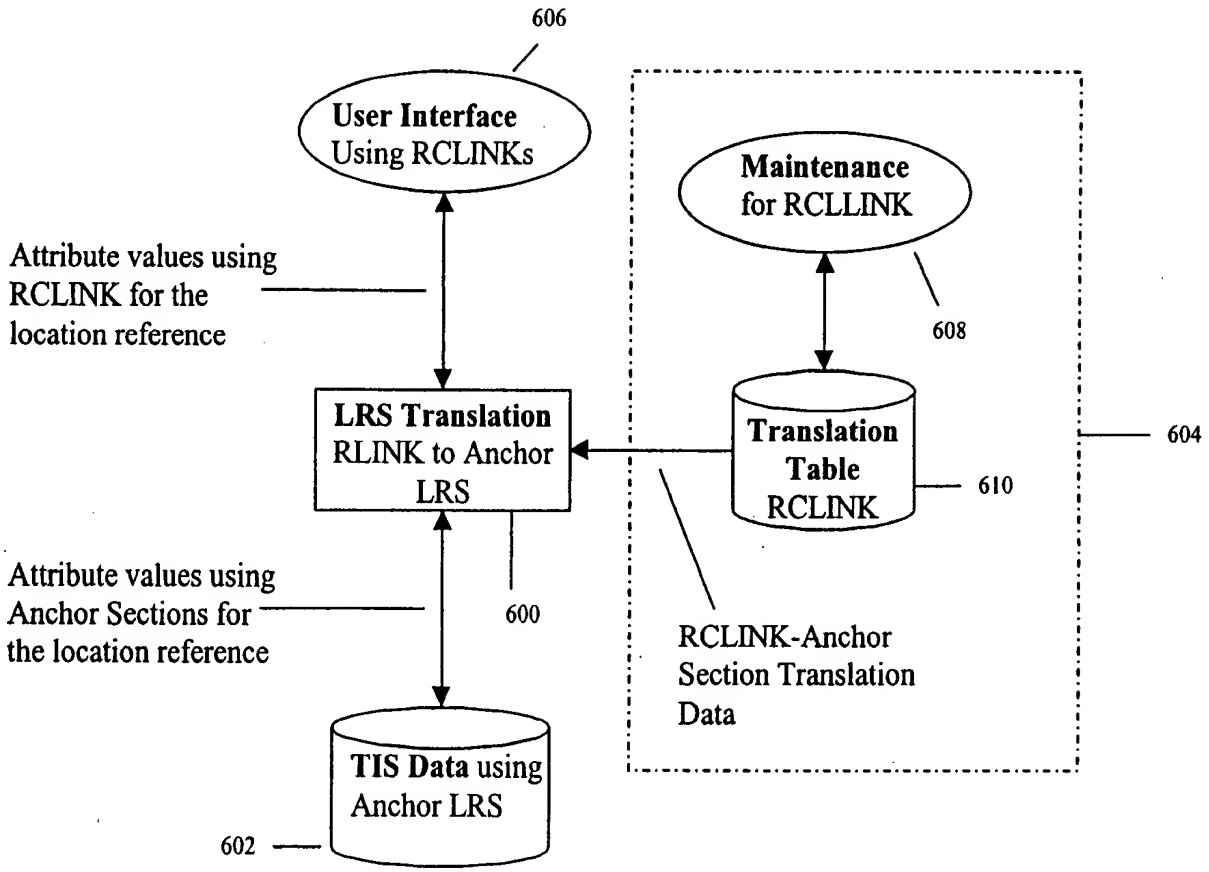

FIG. 6

Patent Zeneca

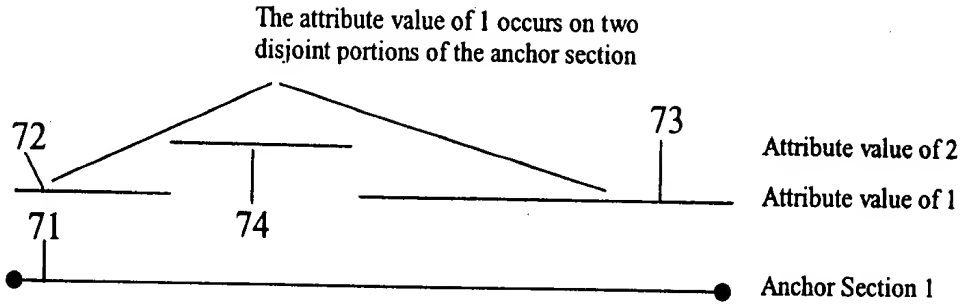

FIG. 7

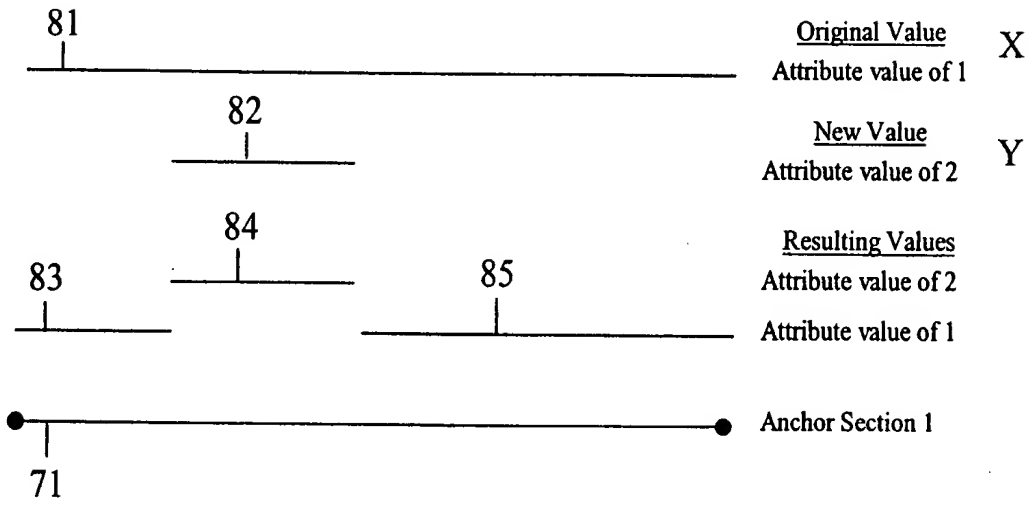
81
Original Value
Attribute value of 1
X
82
New Value
Attribute value of 2
Y
84
Resulting Values
83
85
Attribute value of 2
Attribute value of 1
Anchor Section 1
71

FIG. 8

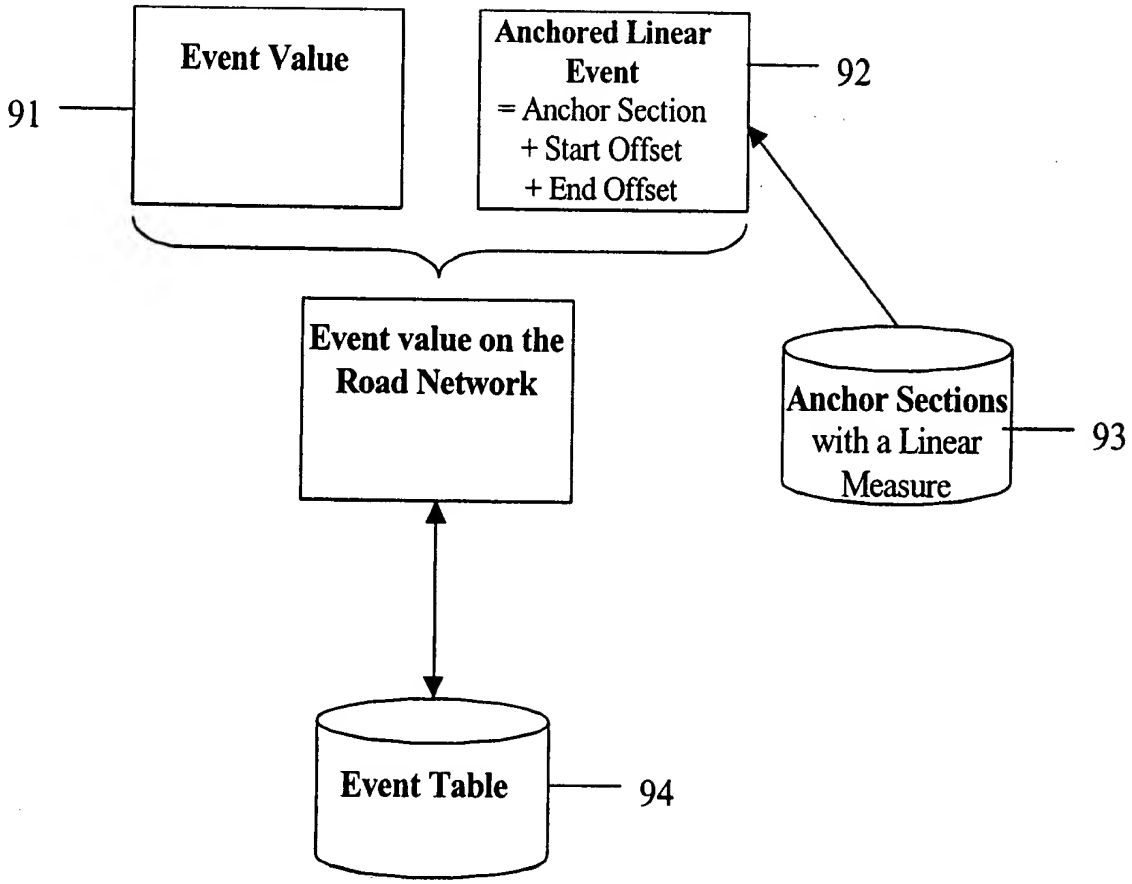
Event Value
91
Anchored Linear Event
= Anchor Section
+ Start Offset
+ End Offset
92
Event value on the Road Network
Anchor Sections with a Linear Measure
93
Event Table
94

FIG. 9

Patent Application

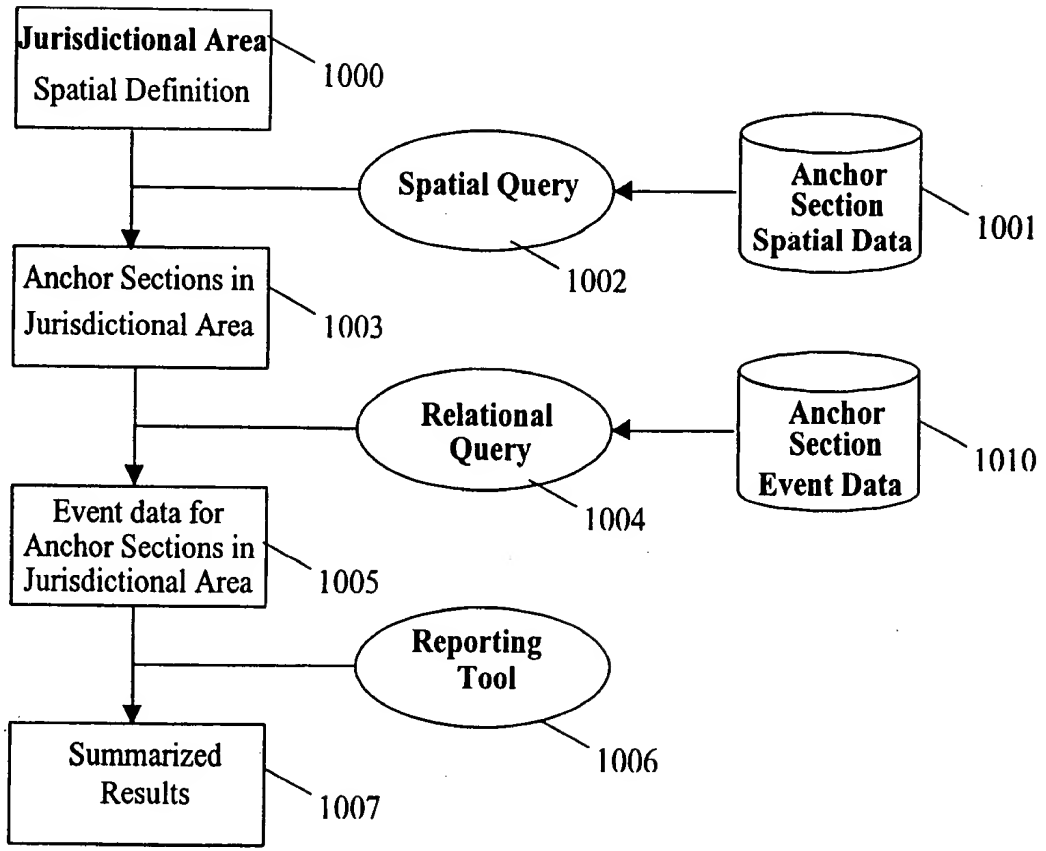

FIG. 10

TOSTO "2ESTE60

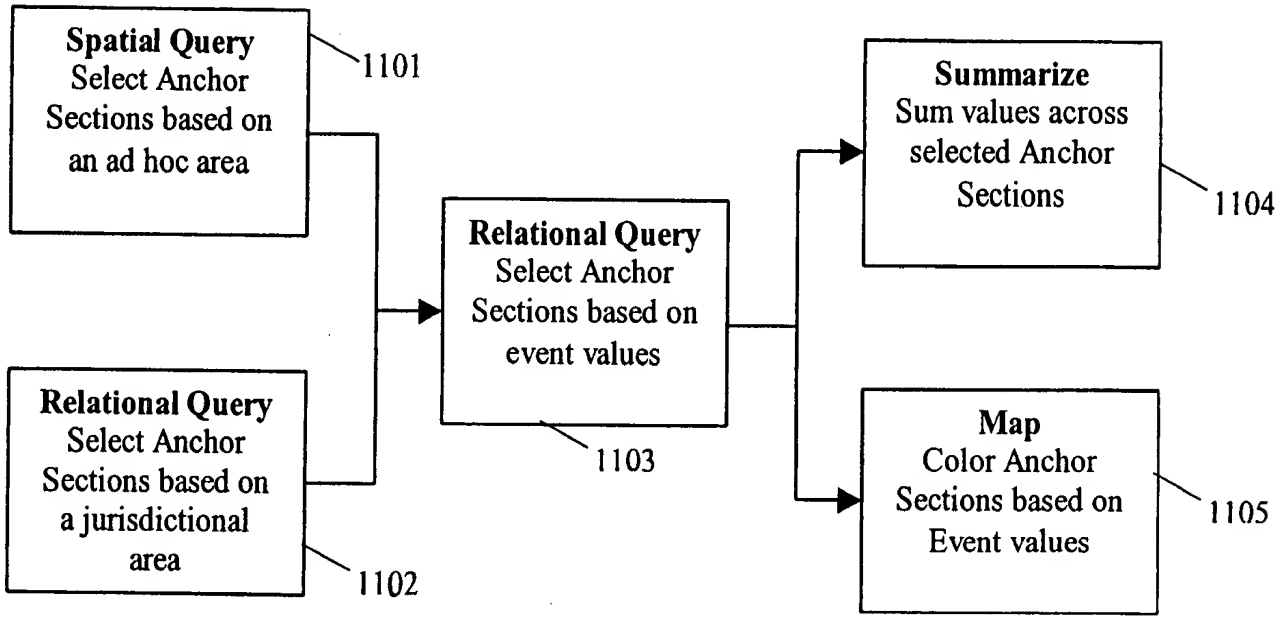

FIG. 11

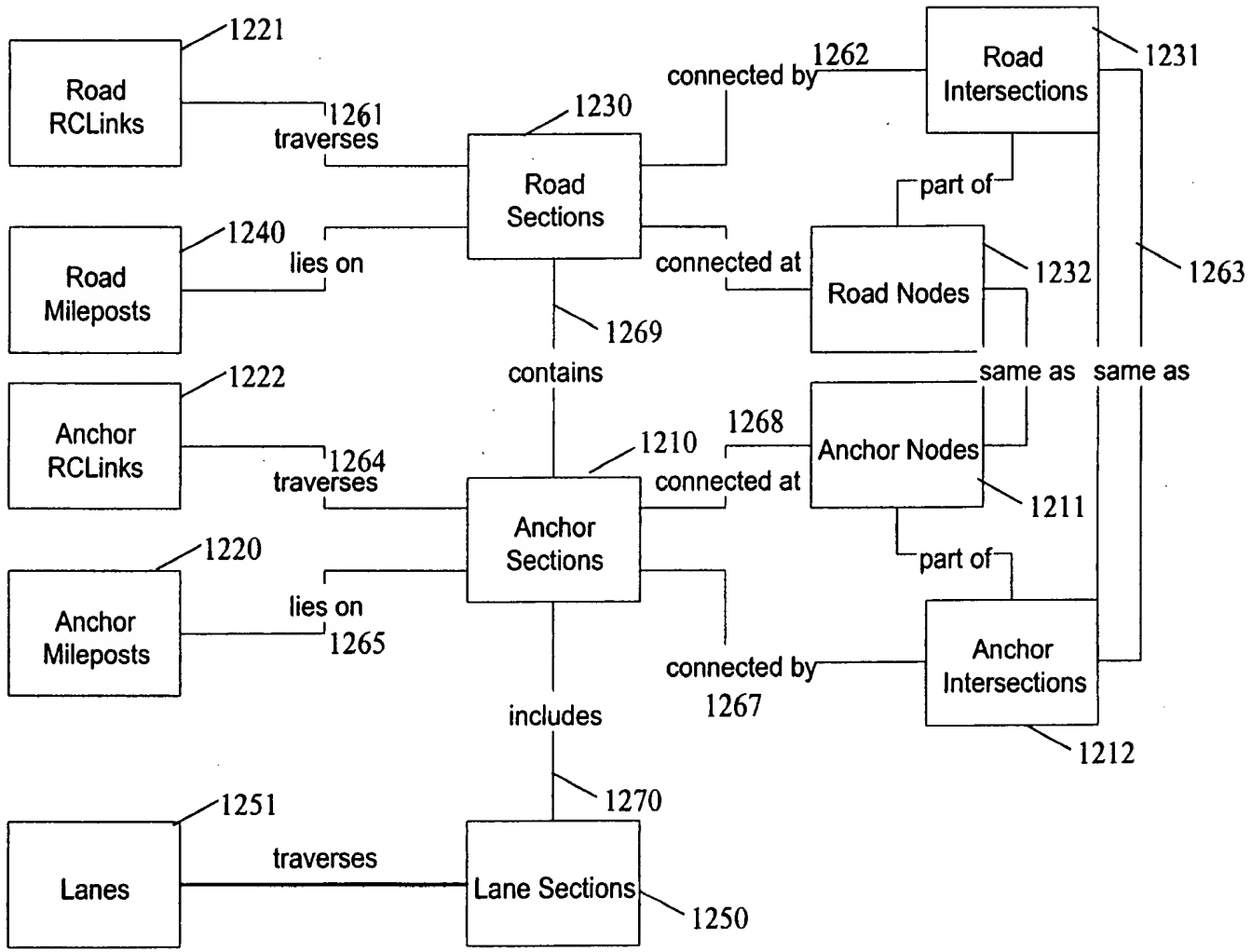
Road RCLinks
1221
1261
traverses
Road Mileposts
1240
lies on
Anchor RCLinks
1222
1264
traverses
Anchor Mileposts
1220
lies on
1265
Lanes
1251
traverses
Road Sections
1230
1269
contains
Anchor Sections
1210
includes
1270
Lane Sections
1250
connected by
1262
connected at
1268
connected by
1267
Road Intersections
1231
part of
Road Nodes
1232
1263
same as
same as
Anchor Nodes
1211
part of
Anchor Intersections
1212

FIG. 12

PATENT APPLICATION

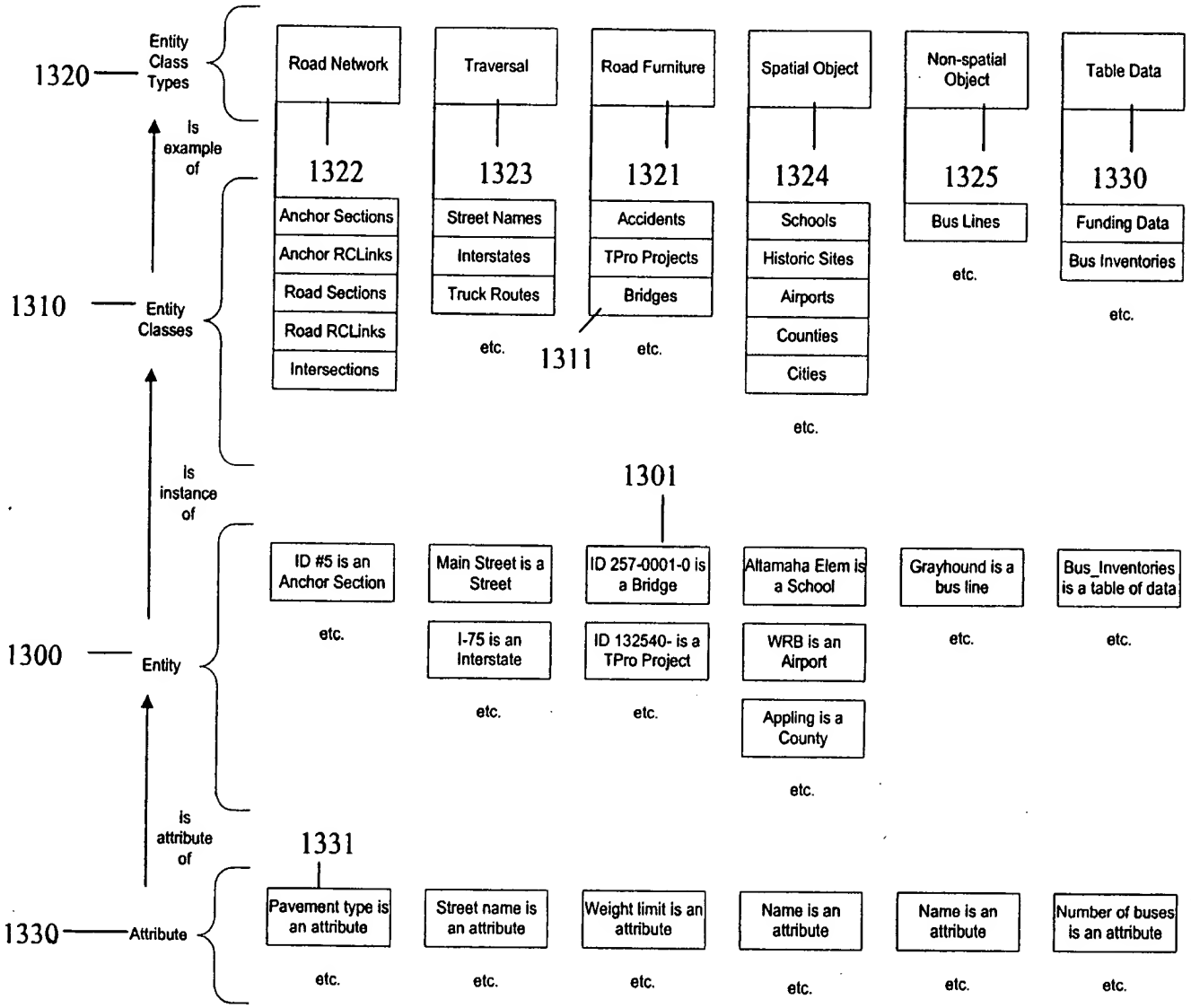

FIG. 13

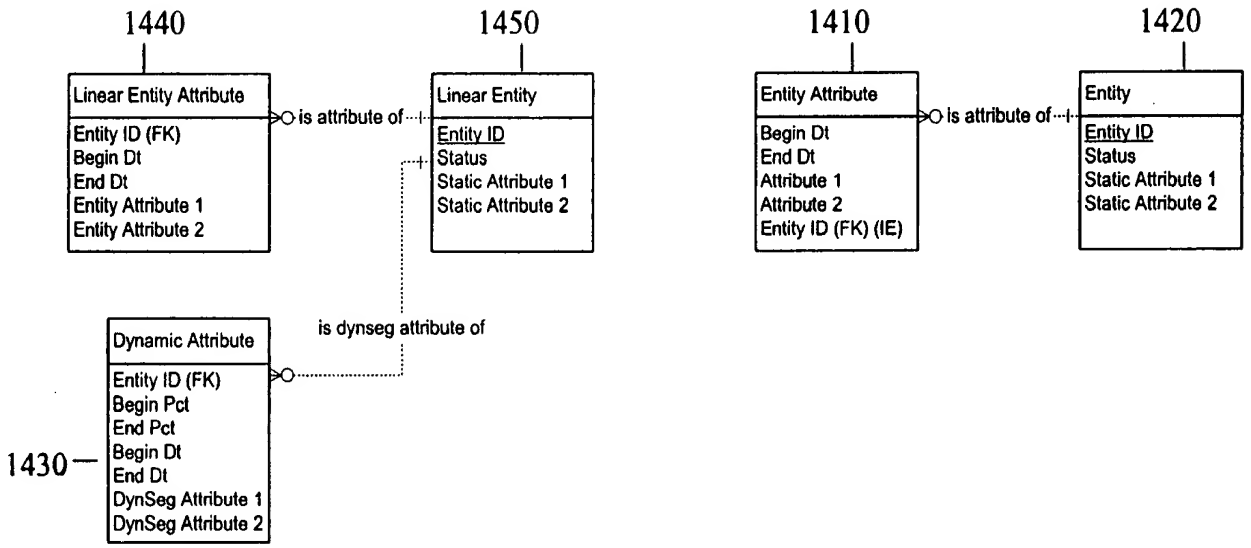
1440
1450
1410
1420
Linear Entity Attribute
Entity ID (FK)
Begin Dt
End Dt
Entity Attribute 1
Entity Attribute 2
is attribute of
Linear Entity
Entity ID
Status
Static Attribute 1
Static Attribute 2
Entity Attribute
Begin Dt
End Dt
Attribute 1
Attribute 2
Entity ID (FK) (IE)
is attribute of
Entity
Entity ID
Status
Static Attribute 1
Static Attribute 2
is dynseg attribute of
Dynamic Attribute
Entity ID (FK)
Begin Pct
End Pct
Begin Dt
End Dt
DynSeg Attribute 1
DynSeg Attribute 2
1430

FIG. 14

Patent Application

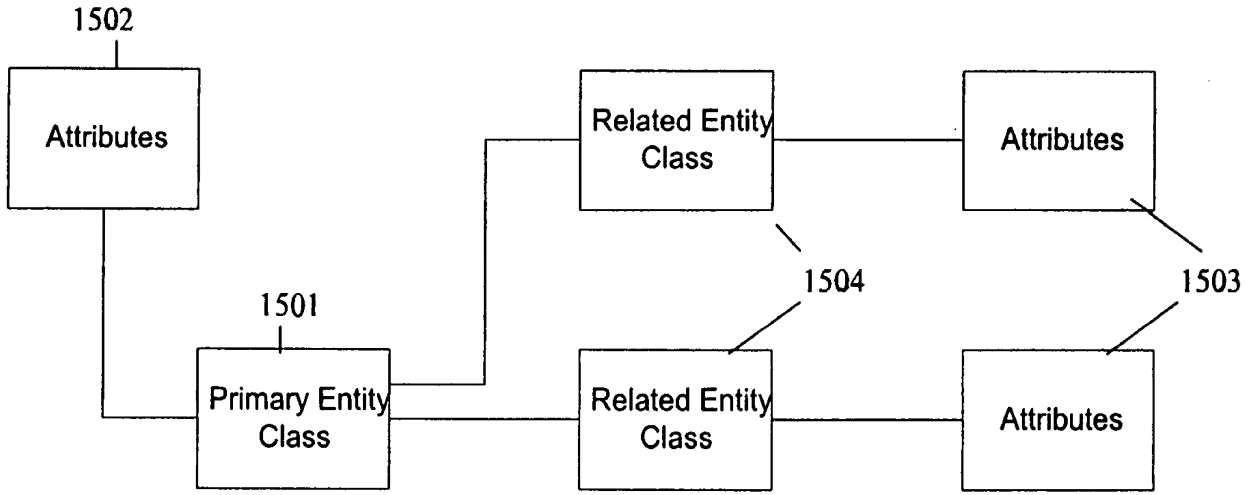

FIG. 15

Patent Pending

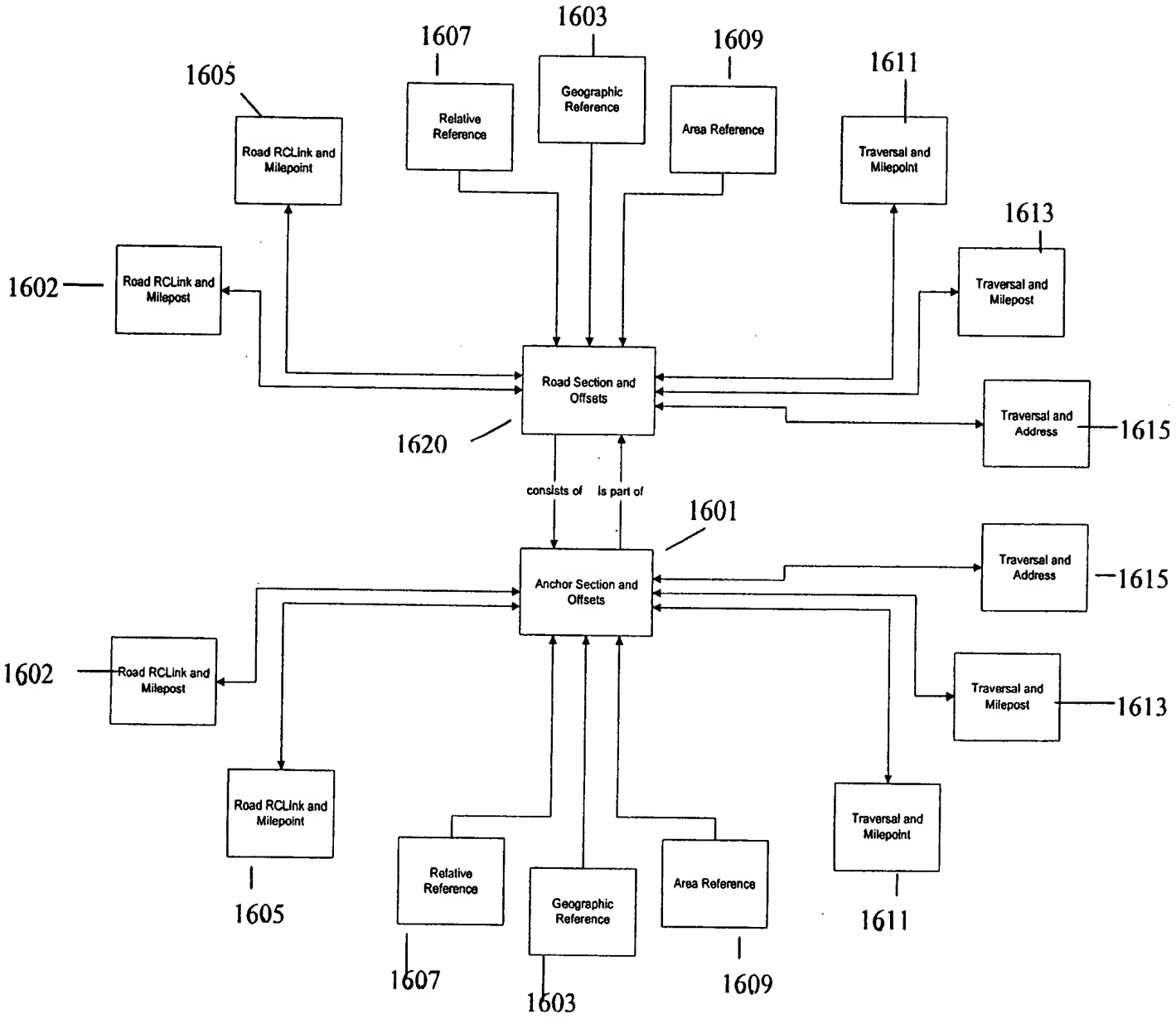

FIG. 16

Patent Pending

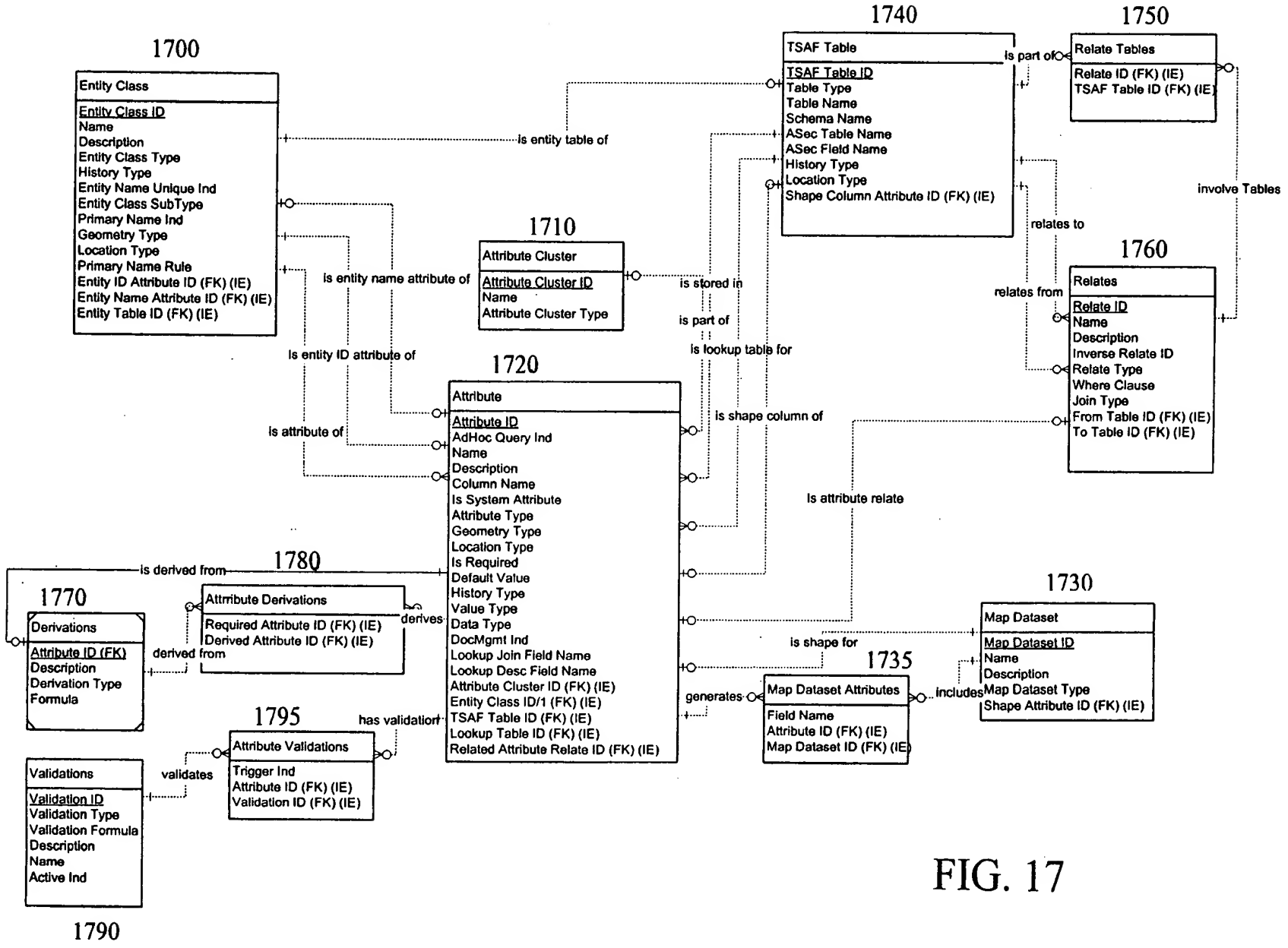

FIG. 17

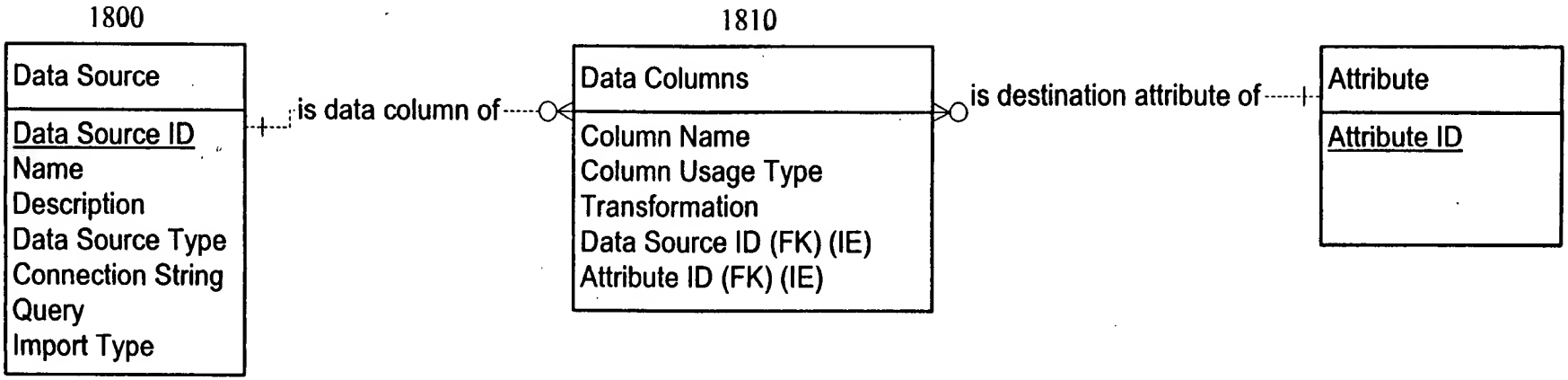
1800
Data Source
Data Source ID
Name
Description
Data Source Type
Connection String
Query
Import Type
is data column of
1810
Data Columns
Column Name
Column Usage Type
Transformation
Data Source ID (FK) (IE)
Attribute ID (FK) (IE)
is destination attribute of
Attribute
Attribute ID

FIG. 18

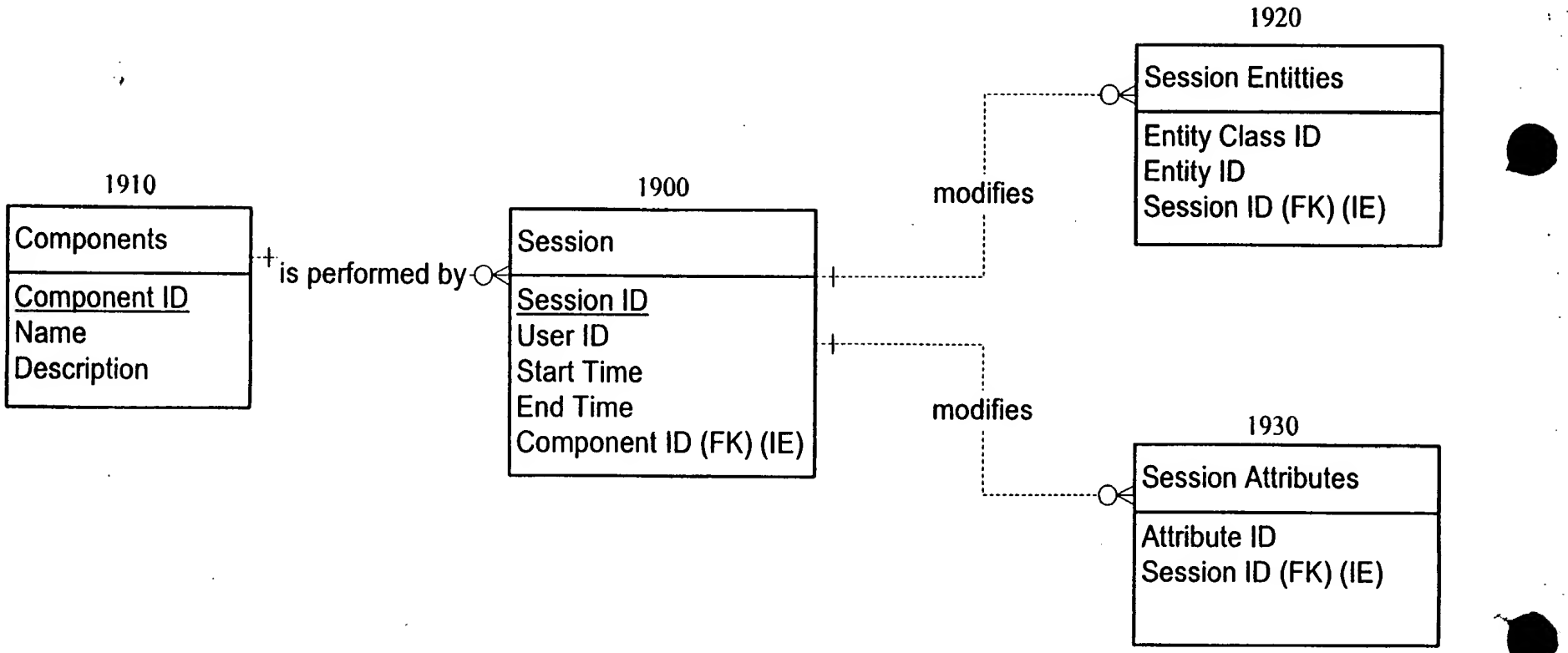
1920
Session Entitties
Entity Class ID
Entity ID
Session ID (FK) (IE)
1910
Components
Component ID
Name
Description
is performed by
1900
Session
Session ID
User ID
Start Time
End Time
Component ID (FK) (IE)
modifies
modifies
1930
Session Attributes
Attribute ID
Session ID (FK) (IE)

FIG. 19

TOSTHO' 2E9HE80

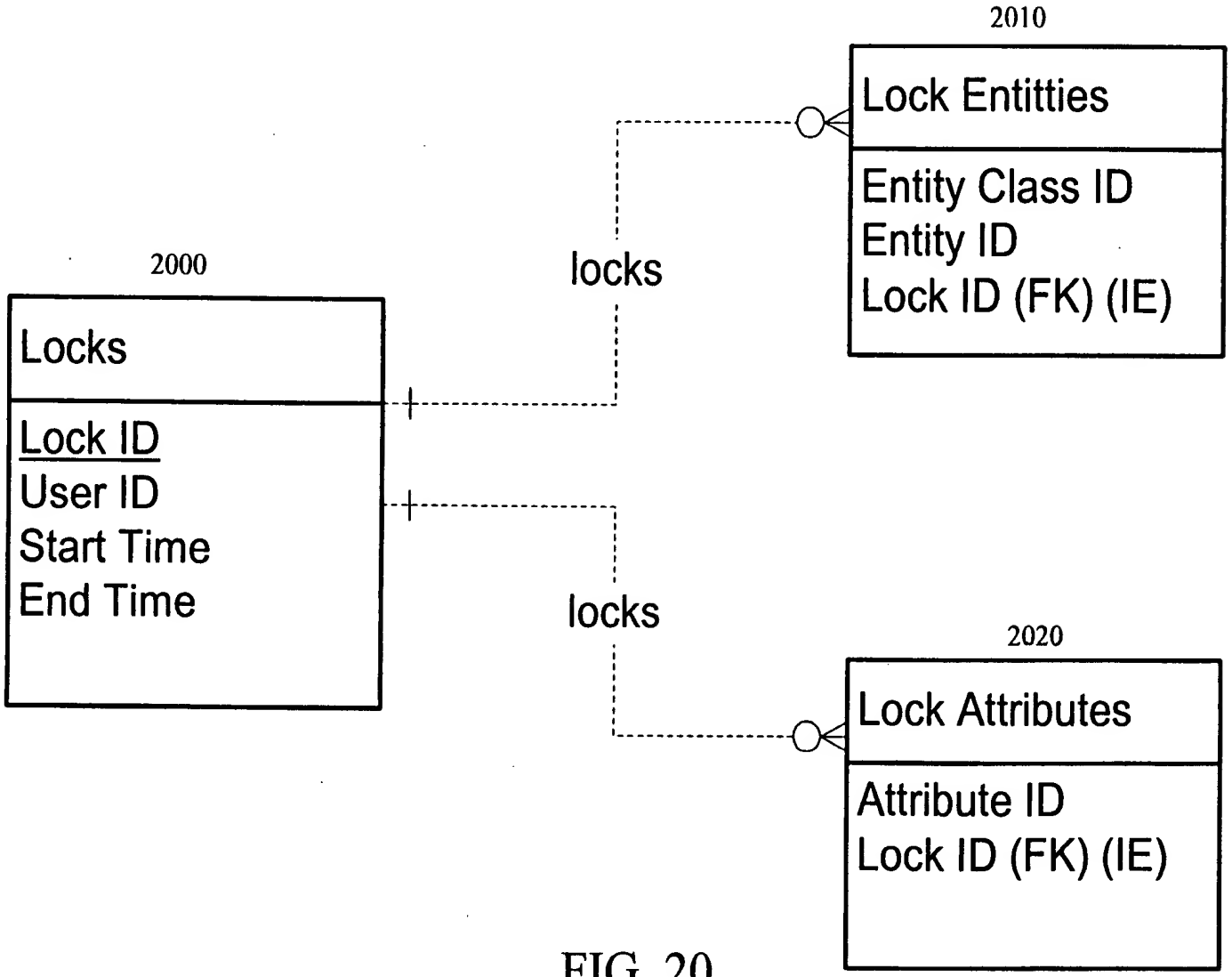

FIG. 20